

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-_____
NPDES NO. CA0004774

FOR

STATE OF CALIFORNIA - DEPARTMENT OF FISH AND GAME
NIMBUS SALMON AND STEELHEAD HATCHERY
AMERICAN RIVER TROUT HATCHERY
SACRAMENTO COUNTY

INTRODUCTION

This Monitoring and Reporting Program is issued pursuant to California Water Code Section 13383 and includes: influent monitoring of raw water supply, effluent monitoring of discharges to waters of the United States and waters of the State, monitoring of discharges to on-site settling ponds, and receiving water monitoring. All water quality samples shall be representative of the volume and nature of the discharge, or representative of the matrix of material sampled. The time, date, and location of sample collection shall be recorded on a chain of custody (COC) form. COC forms shall be completed for each sample collected and copies provided to the Regional Board with the monthly monitoring reports.

Water quality samples do not need to be taken during months when there are no pollutant discharges to surface waters resulting from aquaculture operations, or associated on-site fish processing (e.g. no monitoring is required if no fish are being held at the facility, monitoring for specific chemicals or drugs only when being used and discharged to surface waters). However, monitoring forms are still required to be submitted on a monthly basis during these periods documenting no discharge.

All water quality sampling and analyses shall be performed in accordance with the Monitoring and Reporting Requirements as outlined in Section B of the Standard Provisions of this Order. Water quality sample collection, storage, and analyses shall be performed according to 40 CFR Part 136, or other methods approved and specified by the Executive Officer. Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DHS).

INFLUENT MONITORING

A sampling station shall be established and located where representative samples of the raw water supply can be obtained. **Samples shall be collected at approximately the same time as effluent samples.** Influent monitoring shall include at least the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Influent flow	cfs or mgd	Calibrated meter, weir, or other approved method	Recorded monthly or when flow changes
Total Suspended Solids (TSS)	mg/L	Grab	1/month
Settleable Solids	ml/L	Grab	1/month
Mercury	µg/L	Grab	1/month
pH	standard units	Grab	1/month
Dissolved Oxygen (DO)	mg/L	Grab	1/month

EFFLUENT MONITORING

Outfall 001, Outfall 002, Outfall 003, and Outfall 004

Effluent samples shall be collected from the last connection through which wastes can be admitted into the outfall. Effluent samples shall be representative of the volume and quality of the discharge. Effluent samples shall be collected once a month during or immediately following raceway cleaning or administration of drug or chemical treatments and must be representative of the volume and quality of the discharge at the time when representative levels of solids, drugs, chemicals, or other pollutants are present in the discharge. Time of collection of samples shall be recorded. Outfall 004 need only be monitored in the event the settling ponds overflow and there is a direct discharge to the American River. An alternative inclement weather sampling point for Outfall 002 has been identified as the manhole approximately 80 feet south of the nominal Outfall 002 sampling point. **Any other alternate sampling point (e.g., due to inclement weather) must be approved by the Executive Officer and must be representative of the entire volume and nature of the discharge.** Effluent monitoring at Outfalls 001, 002, 003, and 004 shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Effluent Flow	cfs	Calibrated meter, weir, or other approved method	Recorded monthly or when flow changes

MONITORING AND REPORTING PROGRAM NO. R5-2005-____
STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
NIMBUS SALMON AND STEELHEAD HATCHERY
AMERICAN RIVER TROUT HATCHERY
SACRAMENTO COUNTY

-3-

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Total suspended solids (TSS)	mg/L	Grab	1/month
Net TSS (effluent minus influent)	mg/L	Net calculation	1/month
Settleable solids	ml/L	Grab	1/month
Net settleable solids (effluent minus influent)	ml/L	Net Calculation	1/month
Dissolved oxygen (DO)	mg/L	Grab	1/month
Turbidity	NTU	Grab	1/month
Total Dissolved Solids (TDS) ¹	mg/L	Grab	1/month
Conductivity @ 25°C (Specific Conductance) ¹	µmhos/cm	Grab	1/month (during sodium chloride or calcium chloride use)
Formaldehyde ²	mg/L	Grab	1/month during use
Copper (Total Recoverable) ³	µg/L	Grab	1/month during use
Mercury	µg/L	Grab	1/month
pH	standard units	Grab	1/month
Hardness (as CaCO ₃) ⁴	mg/L	Grab	1/month
Hydrogen peroxide ⁵	mg/L	Grab	1/month during use
Potassium permanganate ⁵	mg/L	Grab	1/month during use
PVP Iodine ⁵	mg/L	Grab	1/month during use
Chloramine-T ⁵	mg/L	Grab	1/month during use
MS-222 ⁵	mg/L	Grab	1/month during use
Aqui-S® ⁵	mg/L	Grab	1/month during use

¹ In months when sodium chloride or calcium chloride is added to waters of the Facility, conductivity and TDS concentration shall be measured during sodium chloride or calcium chloride use.

² In months when formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during formalin use.

³ In months when copper (e.g., copper sulfate) is added to the waters of the Facility, total recoverable copper concentration shall be measured during copper use. A daily maximum or monthly average total recoverable copper concentration shall be considered non-compliant with the applicable effluent limitation only if it exceeds the effluent limitation and the reported minimum level (ML). The highest acceptable ML for calibration purposes is 0.5 µg/L. The sample shall be collected during the time of peak discharge of copper, at least one hour after start of

MONITORING AND REPORTING PROGRAM NO. R5-2005-____
STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
NIMBUS SALMON AND STEELHEAD HATCHERY
AMERICAN RIVER TROUT HATCHERY
SACRAMENTO COUNTY

-4-

treatment. Effluent and receiving water hardness shall be measured concurrently with effluent total recoverable copper concentration.

⁴ Hardness must be measured daily during copper (e.g., copper sulfate) treatments.

⁵ The analytical method used for hydrogen peroxide, potassium permanganate, PVP Iodine, chloramine-T, MS-222, and Aqual-S® shall be approved by the Executive Officer. If no approved methods are available effluent concentrations may be determined by calculation as approved by the Executive Officer.

DISCHARGE TO SETTLING PONDS – Outfall 005

To ensure adequate characterization of wastewater from the Facility during drug and chemical treatment, monitoring of wastewater discharged to the settling ponds is required. This new monitoring (and newly labeled) point will be Outfall 005. Monitoring at Outfall 005 shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	cfs	Calibrated meter, weir, or other approved method	Recorded monthly or when flow changes
Total Dissolved Solids (TDS) ¹	mg/L	Grab	1/month
Conductivity @ 25°C (Specific Conductance) ¹	µmhos/cm	Grab	1/month (during sodium chloride use)
Formaldehyde ²	mg/L	Grab	1/month during use
Copper (Total Recoverable) ³	µg/L	Grab	1/month during use
Mercury	µg/L	Grab	1/month
pH	standard units	Grab	1/month
Hardness (as CaCO ₃) ⁴	mg/L	Grab	1/month
Hydrogen peroxide ⁵	mg/L	Grab	1/month during use
Potassium permanganate ⁵	mg/L	Grab	1/month during use
PVP Iodine ⁵	mg/L	Grab	1/month during use
Chloramine-T ⁵	mg/L	Grab	1/month during use
MS-222 ⁵	mg/L	Grab	1/month during use
Aqual-S® ⁵	mg/L	Grab	1/month during use

¹ In months when sodium chloride or calcium chloride is added to waters of the Facility, conductivity and TDS concentration shall be measured during sodium chloride or calcium chloride use.

MONITORING AND REPORTING PROGRAM NO. R5-2005-____
 STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
 NIMBUS SALMON AND STEELHEAD HATCHERY
 AMERICAN RIVER TROUT HATCHERY
 SACRAMENTO COUNTY

-5-

- ² In months when formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during formalin use.
- ³ In months when copper (e.g., copper sulfate) is added to the waters of the Facility, total recoverable copper concentration shall be measured during copper use. The highest acceptable ML for calibration purposes is 0.5 µg/L. The sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent and receiving water hardness shall be measured concurrently with effluent total recoverable copper concentration.
- ⁴ Hardness must be measured daily during copper (e.g., copper sulfate) treatments.
- ⁵ The analytical method used for hydrogen peroxide, potassium permanganate, PVP Iodine, chloramine-T, MS-222, and Aqual-S® shall be approved by the Executive Officer. If no approved methods are available effluent concentrations may be determined by calculation as approved by the Executive Officer.

RECEIVING WATER MONITORING IN THE AMERICAN RIVER

Receiving water samples shall be collected when fish are being held at the Facility. All receiving water samples shall be grab samples collected at a depth of 6 to 12 inches below the surface. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	100 feet upstream from the Fish Ladder
R-2	100 feet downstream from the seepage points from the settling ponds

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>
Flow	cfs or mgd	R-1	1/month
pH	standard units	R-1, R-2	1/month
Temperature	°C	R-1, R-2	1/month
Dissolved Oxygen	mg/L	R-1, R-2	1/month
Total Dissolved Solids (TDS)	mg/L	R-1, R-2	1/month
Conductivity @ 25°C (Specific Conductance) ¹	µmhos/cm	R-1, R-2	1/month
Turbidity	NTU	R-1, R-2	1/quarter
Hardness (as CaCO ₃) ²	mg/L	R-1	1/month
Copper (Total Recoverable) ³	µg/L	R-1, R-2	1/month during use
Mercury	µg/L	R-1, R-2	1/quarter

¹ In months when sodium chloride or calcium chloride is added to waters of the Facility, conductivity shall be measured during sodium chloride or calcium chloride use.

² In months when copper (e.g., copper sulfate) is added to waters of the Facility, receiving water hardness shall be measured during copper use.

- ³ In months when copper (e.g., copper sulfate) is added to the waters of the Facility, total recoverable copper concentration shall be measured during copper use. The highest acceptable ML for calibration purposes is 0.5 µg/L. The sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent and receiving water hardness shall be measured concurrently with effluent total recoverable copper concentration.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-3. Attention shall be given to the presence or absence of:

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| a. Floating or suspended matter | e. Visible films, sheens, or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

Notes on receiving water conditions shall be summarized in the monitoring report.

MONTHLY DRUG AND CHEMICAL USE REPORT

Order R5-2005-____ prohibits the discharge of aquaculture chemicals and drugs unless the Regional Board has received prior notice in accordance with Provision G.3. of Order R5-2005-____, the following information shall be submitted for all aquaculture drugs or chemicals used at the Facility. This information shall be reported at **monthly** intervals using the appropriate Monthly Discharge Monitoring Reports:

- a. The name(s) and active ingredient(s) of the drug or chemical.
- b. The date(s) of application.
- c. The purpose(s) for the application.
- d. The method of application (e.g., immersion bath, administered in feed), duration of treatment, whether the treatment was static or flush (for drugs or chemicals applied directly to water), amount in gallons or pounds used, treatment concentration(s), and the flow in cubic feet per second (cfs) in the treatment units.
- e. The total flow through the facility in cubic feet per second (cfs) to the American River after mixing with the treated water.
- f. For drugs and chemicals applied directly to water (i.e., immersion bath, flush treatment) and for which effluent monitoring is not otherwise required, the estimated concentration in the effluent at the point of discharge to the American River.

- g. The method of disposal for drugs or chemicals used but not discharged in the effluent.

Calculation of Concentration:

For drugs or chemicals used in an immersion bath, “drip” treatment, or in other direct application to waters at the facility, use the following formula to calculate concentration (C) at the point of discharge.

C = concentration of chemical or drug at the point of discharge

$$C = \frac{(\text{treatment concentration}) \times (\text{volume of water through treatment area during treatment time})}{(\text{volume of water through facility during treatment time} + \text{volume of settling basin})}$$

Example: Oxytetracycline concentration

$$C = \frac{100.0 \text{ mg/L (oxytetracycline)} \times 1800 \text{ gallons of water in treatment area during 1-hour treatment}}{191,568 \text{ gallons of water through facility in 1-hour} + 561,000 \text{ gallons of water in settling basin}}$$

$$C = 0.2 \text{ mg/L oxytetracycline at the point of discharge}$$

This information shall be submitted quarterly. If the analysis of this chemical use data compared with any toxicity testing results or other available information for the therapeutic agent, chemical or anesthetic indicates that the discharge may cause, have the reasonable potential to cause, or contribute to an excursion of a numeric or narrative water quality criterion or objective, the Executive Officer may require site specific whole effluent toxicity (WET) tests using *C. dubia* or reopen this Order to include an effluent limitation based on that objective.

SEPTIC TANK MONITORING AND INSPECTIONS

Septic tank maintenance inspections (including tank sludge level measurement) shall be performed at least once per year. Information concerning inspections and maintenance activities (including, but not limited to, pumping, replacement, and repairs) shall be included in the monitoring reports submitted to the Regional Board and the Annual Report.

LEACHFIELD MONITORING

The Discharger shall inspect leachfield areas monthly and submit the results in the monthly monitoring report. Monitoring shall include any observations of seeps, erosion, field saturation, ponding liquid, the presence of nuisance and other field conditions.

PRIORITY POLLUTANT METALS MONITORING

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Board has determined that, based on priority pollutant data collected from this and similar facilities, discharge of priority pollutants other than metals is unlikely. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger monitor the influent (receiving water upstream) and effluent and analyze the sample for priority pollutant metals **one time at least 180 days but no more than 365 days prior to expiration of this Order.**

The Discharger must analyze pH and hardness of the influent (receiving water) and effluent at the same time as priority pollutant metals. The priority pollutant metals for which this one-time analysis is required are as follows:

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| ▪ Antimony | ▪ Lead |
| ▪ Arsenic | ▪ Mercury |
| ▪ Beryllium | ▪ Nickel |
| ▪ Cadmium | ▪ Selenium |
| ▪ Chromium (III) | ▪ Silver |
| ▪ Chromium (IV) | ▪ Thallium |
| ▪ Copper | ▪ Zinc |

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Board if the alternative method has the same or better detection level than the method listed.

Method Description	EPA Method	Constituents
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI

All priority pollutant metal analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

- Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
- Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
- For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

GENERAL REPORTING REQUIREMENTS

The Discharger shall implement this monitoring program on the first day of the month following adoption of the Order. The Discharger shall submit monthly Discharge Monitoring Reports to the Regional Board by the **first day of the second month** following sample collection. Annual monitoring reports shall be submitted by **30 January** each year. All reports submitted in response to this Order shall comply with signatory requirements of Standard Provision D.6.

By **30 January of each year**, the Discharger shall submit a written Annual Report to the Executive Officer containing the following information (Reports may refer to monthly monitoring data previously submitted where applicable):

1. A tabulation by month of the pounds of fish produced during the previous year including dates of operation and species and amount (lbs.) of fish harvested, processed, or released per month.
2. A summary of information on monthly land application and land disposal of solids and wastewater during the previous year including the type and amount of solids and wastewater that are land-applied or land disposed.
3. A summary of all feeding practices used at the facility on a monthly basis including:
 - a. The name(s), type(s) and amount(s) of feed(s) used.
 - b. The percent of phosphorus in the feed(s) used (as available).
 - c. The method and frequency of feeding.
4. Septic tank inspection and maintenance report.
5. Monthly records documenting cleaning, inspections, maintenance, and repairs of all fish production and/or settling ponds.

In the event the Discharger becomes aware of a violation of the prohibitions, specifications, or limitations of this Order, the Discharger shall notify the Board by telephone within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days.

If the Discharger monitors any pollutant more frequently than is required by this Order, the results of such monitoring shall be included in the calculation of the values required in the monthly monitoring report. Such increased frequency also shall be indicated on the monthly monitoring report.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

(Date)